

CLAIMS

1. A method of remote management of products and services which comprises the following steps and parts:
 - a. The creation of one communication centre (15), (16) as a minimum that will be equipped with means for receiving and sending messages (34), means for processing information (31) and means for storing and handling information (32), means for direct communication (33), means for processing and displaying consumption curves (35) means for sending and receiving invoice settlement information, programs and means for the interruption and restoration of the supply of users, programs and means for group communication, as well as means for radio or wired communication.
 - b. The installation of the following means in the already existing consumption metering devices (23), (24), (25) and (26), means for recording mechanical or electrical or optical indications by the metering devices with the help of a microprocessor (87), that disposes of the means required for recognition of the meter indications (90), means for reading and transforming the pulses that may be transmitted through power transfer lines (9) or radio (17). The microprocessor also comprises means for optical meter reading (92), means for OCR digitisation (93) and means for communication (95), (96).
 - c. The installation of one special device (1) as a minimum at the property of the consumer, that will comprise a microprocessor (132) equipped with appropriate software, that will dispose of means for receiving and processing the messages sent by the sensor (145), means for processing and storing the messages (147), means for communication (5) with the communication centres (15), (16), connection protocols through the Internet (133), (140), (141), programs and connection protocols through wireless cellular telephony (17). It disposes of means for communication with one consumer as a minimum, means for the receipt of information (3) by the consumer, means of

multiple communication with more than one consumers and means for multiple communication with different communication centres (15), (16).

2. A method such as the one mentioned in claim 1, according to which means for collection and processing of information received by the product or service recording meters (23), (24), (25), have been installed at the premises of the user – consumer (1) and the meters are electric power meters (23).

3. A method such as the one mentioned in claim 1, according to which means for collection and processing of information received by the product or service recording meters (23), (24), (25), (26) have been installed at the premises of the user – consumer and the meters are water measuring meters (24).

4. A method such as the one mentioned in claim 1, according to which means for collection and processing of information received by the product or service recording meters (23), (24), (25), (26) have been installed at the premises of the user – consumer (1), and the meters are gas meters (25) (natural gas).

5. A method such as the one mentioned in claim 1, according to which means for collection and processing of information received by the product or service recording meters (23), (24), (25), (26) have been installed at the premises of the user – consumer (1) and the meters are heating meters (26).

6. A method such as the one mentioned in claim 2, according to which the collection of data by the electric power meter is carried out with the use of electric pulse sensors (59).

7. A method such as the mentioned in claim 2, according to which the collection of consumption data for the user – consumer (1) may be effected with the use of optical means for direct reading of the mechanical indications (display-panel) (62) of the power meter (23) (KWh meter).

8. A method such as the one mentioned in claim 1, according to which the collection of consumption data for the user – consumer (1) may be

effected with the use of optical means (30) for direct reading of mechanical indications of the water meter (24).

9. A method such as the one mentioned in claim 1, according to which the collection of consumption data for the user – consumer (1) may be effected with the use of optical means (30) for direct reading of mechanical indications of the gas meter (25), (natural gas).

5 10. A method such as the one mentioned in claim 1, according to which the collection of consumption data for the user – consumer (1) may be effected with the use of optical means (30) for direct reading of mechanical indications of the heating meter (26).

10 11. A method such as the one mentioned in claim 1, according to which the information collected from the meter of the user – consumer may be processed on the basis of time, leading to the creation of more than one charging zones (42).

15 12. A method such as the one mentioned in claim 1, according to which the information collected by the meter of the consumer – user is transferred from the meter (23) to the communication unit of the user – consumer (1) through power transfer lines (9), (10), (11), (19).

13. A method such as the one mentioned in claim 1, according to which the transfer of data from the meter of the user – consumer is carried out by means of radio communication (17), (18) to the reading collection and communication unit (1).

20 25 14. A method such as the one mentioned in claim 1, according to which the transfer of data from the meter of the user – consumer, through the communicator (1) and to the information collection (15), (16) and processing centre of the provider of the products or services is effected through the Internet (14).

15. A method such as the one mentioned in claim 1, according to which the transfer of data from the meter of the user – consumer, through the communicator (1) and to the information collection (15), (16) and processing centre of the provider of the products or services is effected through a simple telephone line (5), (34).

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16. A method such as the one mentioned in claim 1, according to which the transfer of data from the meter of the user – consumer, through the communicator (1) and to the information collection (15), (16) and processing centre of the provider of the products or services is effected through cellular mobile telephony (5), (34).

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17. A method such as the one mentioned in claim 1, according to which the consumer – user (1) is able to receive information concerning the progress and development of the respective consumption (36), (37), (38) from the means of collection and processing of information (15), (16).

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18. A method such as the one mentioned in claim 1, according to which the consumer – user (1) is able to settle the invoices (40), (41) through the communication unit (1) with the information collection (15), (16) and processing centre of the provider of the products and services.

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19. A method such as the one mentioned in claim 1, according to which the consumer – user may express his opinion that has been requested through the communication system (1) to the information collection and processing centre (15), (16) of the provider of the products and services.

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20. A method such as the one mentioned in claim 1, according to which the product or service providing company (15), (16) may interrupt the supply of services and products to the consumer – user through the communication circuit (5), (34).

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21. A method such as the one mentioned in claim 20, according to which the interrupted service or product refers to the acquisition of electric power by the consumer – user.

22. A method such as the one mentioned in claim 20, according to which the service or/ and product providing company (15), (16) may reconnect the consumer – user and restore the supply of products and services.

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23. A method such as the one mentioned in claim 20, according to which the natural gas supply company (15), (16) may interrupt the supply

(45), (48) of the consumer – user (1) through the communication system (5), (34).

24. A method such as the one mentioned in claim 20, according to which the service and product provider is able to reconnect the consumer – user to the system.

5 25. A method such as the one mentioned in claim 20, according to which the natural gas supplying company (15), (16) may interrupt the supply (48) to the client – user for safety reasons, such as the presence of a leak or uncontrolled consumption.

10 26. A method such as the one mentioned in claim 20, according to which the service and product provider is able to reconnect (48) the consumer – user to the system.

27. A method such as the one mentioned in claim 20, according to which the water supply company is able to interrupt (48) the supply of the client – user for technical reasons associated with the exploitation and financial management.

15 28. A method such as the one mentioned in claim 20, according to which the water supplying company may reconnect (48) and restore the supply to the client – user.

20 29. A method such as the one mentioned in claim 20, according to which the water supplying company may interrupt (48) the supply to the client – user for reasons of safety, such as uncontrolled consumption.

30. A method such as the one mentioned in claim 29, according to which the water supplying company may restore (48) the supply to the client – user that was interrupted for safety reasons.

25 31. A method such as the one mentioned in claim 1, according to which the system may restrict the consumption of water by a set number of product volume units (78) for protection against excessive consumption or uncontrolled leak at the premises of the client – user.

30 32. A method such as the one mentioned in claim 1, according to which the processing unit of the consumer – user (1) receives consumption related

information by the meter (23), with the use of pulse generating means (55), (56), (60) that are installed to the interior of the meter.

33. A method such as the one mentioned in claim 1, according to which the processing unit of the consumer – user (1) receives consumption related information by the meter (23), with the use of pulse generating means (55), (56), (60) that are installed to the exterior of the meter.

5 34. A method such as the one mentioned in claim 1, according to which the processing unit of the consumer – user (1) receives consumption related information by the meter (23), with the use of optical means (29), (30) that are installed to the interior of the meter (23).

10 35. A method such as the one mentioned in claim 1, according to which the processing unit of the consumer – user (1) receives consumption related information by the meter (23), with the use of optical means (29), (30) that are installed to the exterior (70) of the meter (23).

15 36. A method such as the one mentioned in claim 1, according to which the processing unit of the consumer – user (1) receives consumption related information by the meter (23), with the use of pulse generating means (55), (56) that are installed to the interior of the meter and are supplied by means of external contacts (72) of special design and construction.

20 37. A method such as the one mentioned in claim 1, according to which the transmission of data between the meter (23) of the consumer and the communication unit of the consumer – user (1) is carried out by means of power line carrier (55), (56) transmission to the electric power transfer lines (10), (11) of the consumer – user.

25 38. A method such as the one mentioned in claim 1, according to which the transmission of data between the meter (23) of the consumer and the communication unit of the consumer – user (1) is carried out by means of radio electromagnetic communication (17), (18).

39. A method such as the one mentioned in claim 1, according to which the transmission of data between the meter (224), 25 of the consumer and the communication unit of the consumer – user (1) is carried out by microwaves (Bluetooth), (17), (18).

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40. A method such as the one mentioned in claim 1, according to which the transmission of data between the communication unit (1) of the consumer – user and other meters with the exception of electric power meters (24), (25), (26) is carried out by means of radio, electromagnetic communication (17), (18).

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41. A method such as the one mentioned in claim 1, according to which the transmission of data between the communication unit (1) and the consumer's meter, which is installed at a different electric power supply phase (19), is effected by means of microwaves (Bluetooth) (17), (18).

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42. A method such as the one mentioned in claim 1, according to which the transmission of data between the communication unit (1) and the consumer's meter, which is installed at a different electric power supply phase (19), is effected by means of electromagnetic communication (17), (18).

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43. A method such as the one mentioned in claim 1, according to which the transmission of data between the communication unit (1) of the consumer – user and other meters (24), (25), (26) with the exception of electric power meters (23), is carried out by means of microwaves (Bluetooth), (17), (18).

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44. A method such as the one mentioned in claim 1, according to which many different meters may send data to be processed to a common use communication unit (1) of the consumer – user.

45. A method such as the one mentioned in claim 44, according to which the common use communication unit (1) may service more than one consumer – users.

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46. A method such as the one mentioned in claim 44, according to which the common use communication unit (1) disposes of the software required in order to service multiple users.

47. A method such as the one mentioned in claim 44, according to which the common use communication unit (1) may issue invoice settlement collections.

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48. A method such as the one mentioned in claim 1, according to which the central collection and processing unit of the service providing company (15), (16), disposes of the software required in order to undertake and process information received by the users – customers.

5 49. A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software required for the registration and storing of information from the consumer – user (database).

10 50. A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for sending messages to the users – consumers regarding the settlement of obligations (40), (41).

15 51. A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for sending promotion material to the users – consumers.

52. A method such as the one mentioned in claim 48, according to which the central collection and processing unit, disposes of the software and means required for sending poll messages to the users – consumers.

20 53. A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for sending commands and messages to a group of users – consumers (broadcasts).

25 54. A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for sending price updates to the users – consumers.

55. A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for sending product and service supply interruption orders to the users – consumers.

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56.A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for sending supply reconnection orders to the users – consumers (1).

5 57.A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for sending fuel change orders to the users – consumers under special contract (40), (41).

10 58.A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for accepting customer invoice payments for the supply of electric power (40), (41).

15 59.A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for accepting customer invoice payments for the water supply (40), (41).

20 60.A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for accepting customer invoice payments for the supply of gas (natural gas) (40), (41).

61.A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for accepting customer invoice payments for the supply of heating services (40), (41).

25 62.A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for accepting product transaction orders.

63.A method such as the one mentioned in claim 48, according to which the central collection and processing unit (15), (16), disposes of the software and means required for processing data with a plotter (35) in order to draft the consumption curves of users – consumers.

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64. A method such as the one mentioned in claim 48, according to which the central collection and processing unit, disposes of the software and means required for processing data with a plotter (35) and the means required for sending this information to the customers – users disposing of the required means for receiving it.

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65. A system disposing of at least one microprocessor (132), means for receiving messages and information coming from different sensors and meters of the system, means for processing the information, means for storages, means for presentation (138) of the information to the consumer – user, means for the collection of information sent by the consumer (139), means for radio communication with the sensors, means for sending alarms, means for bidirectional communication (5) with the central collection and processing unit (15) of the service and product providing agency, means for the collection of signals and information (17) by the meters of the consumer, means for processing and storing information (147) and means for sending and receiving power line carrier signals through power transfer lines (9).

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66. A system such as the one mentioned in 65, in which communication (5) with the information collection and collection centre (15), (16) of the product and service supplying company is carried out through the Internet (14).

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67. A system such as the one mentioned in 65, in which communication (5) with the information collection and collection centre (15), (16) of the product and service supplying company is carried out through mobile telephony (34).

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68. A system such as the one mentioned in 65, in which communication (5) with the information collection and collection centre (15), (16) of the product and service supplying company is carried out through a simple telephone line (34).

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69. A system such as the one mentioned in 65, in which the meters (23) sending information to the communication apparatus (1) are electric power meters.

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70. A system such as the one mentioned in 65, in which the meters sending information to the communication apparatus (1) are water supply meters (24).

5 71. A system such as the one mentioned in 65, in which the meters (23) sending information to the communication apparatus (1) are gas meters (25), (natural gas).

72. A system such as the one mentioned in 65, in which the meters that send information to the communication apparatus (1) are heating meters (26).

10 73. A system such as the one mentioned in 65, in which the means of communication between the communication device (1) and the meter is the exchange of power line carrier (96), (145) signals at the electric power transfer lines (9) of the consumer – user.

15 74. A system such as the one mentioned in 65, in which the means of communication between the communication device (1) and the meter (25), is the exchange of Bluetooth signals (17), (18).

75. A system such as the one mentioned in 65, in which the means of communication between the communication device (1) and the meter (24), is effected by means of electromagnetic radio communication (17).

20 76. A system such as the one mentioned in 65, in which the communication apparatus (1) receives information by the individual meters (23) of the user – consumer in the form of digital data (145).

77. A system such as the one mentioned in 65, in which the communication apparatus (1) receives information by the individual meters (23) of the user – consumer in the form of digitised optical images (30).

25 78. A system such as the one mentioned in 65, in which the communication apparatus (1) receives digitised optical images and processes them with the use of an OCR software program (29).

79. A system such as the one mentioned in 65, disposing of the means required for communication between the meters installed at different electric power supply phases.

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80. A system such as the one mentioned in 65, disposing of the means required for recognition of emergency conditions and means of classification thereof as also of means for sending data to the communication centres (15), (16).

5 81. A system such as the one mentioned in 65, disposing of the means required for sending and receiving messages in more than one communication centres (15), (16).